

1, 2 (1634), is older than the above and the insect is a synonym of *orientalis*, but the new world locality is not there mentioned. The first reference to this species known to me with America noted as the habitat is by Linnaeus in his Syst. Nat., ed. x, p. 424 (1785)."

A similar investigation into the Lepidoptera by Dr. Schaus failed to reveal any earlier reference to a lepidopterous insect.

With it all, however, to find out the first insect mentioned in literature as occurring in North America it would be necessary to read all of the early accounts of exploration, and of course this would be hardly worth while; but it seems very probable that all of these accounts will include some mention of the cochineal insect. It is therefore very likely that this is the first insect to be definitely recorded from America.

New Species of Mimetic Miridae from North America (Hemiptera).*

By HARRY H. KNIGHT, Ames, Iowa.

ORECTODERUS ARCUATUS, n. sp.—Smaller and more slender than *obliquus* Uhler, easily distinguished in the male by the arcuate pale mark formed by the pale of the cuneus joining with that along inner margin of corium; female distinguished by the strongly clavate second antennal segment and by the polished surface of abdomen.

♂. Length 6.7 mm., width, 1.9 mm. Head: width 1 mm., vertex .44 mm. Rostrum, length 2.3 mm., reaching to middle of intermediate coxae. Antennae: segment I, length, .32 mm.; II, 1.88 mm., gradually thickened to clavate (.133 mm. thick) on apical half; III, 1.09 mm., slender; IV, .62 mm. Pronotum: length .86 mm., width at base 1.39 mm.; calli more prominent than in *obliquus*.

Black, shining except scutellum and mesoscutum, legs orange red, tibia paler, tarsi blackish; hemelytra including membrane and veins black, clavus exterior to claval vein, whitish translucent; corium bordering clavus and continuing around inner apical angle to join cuneus, basal one-third or more of cuneus, white, or whitish translucent. Clothed with simple fuscous pubescence.

*Contribution from the Department of Zoology and Entomology Iowa State College, Ames, Iowa.

♀. Length 4.8 mm., brachypterous, width of abdomen 1.6 mm. Head: width 1.15 mm., vertex .58 mm., from tip of tylus to dorsal margin of eye 1.18 mm., height of eye .53 mm., width of eye .33 mm. Rostrum, length 2.22 mm., reaching to base of hind coxae. Antennae: segment I, length .33 mm.; II, 1.81 mm., slender on basal half, sharply clavate on apical third, thickness .20 mm.; III, broken; orange red, the clavate portion fuscous to blackish. Pronotum: length .89 mm., width at base .95 mm., width at middle .86 mm., constricted immediately in front of basal angles, broadly convex anteriorly, margins set with several, heavy, black bristles, coxal cleft visible from above. Hemelytra represented by short pads which beyond apex of scutellum are bent sharply erect, much as in *obliquus*. Abdomen subglobose beginning with third segment, polished and shining, rather sparsely clothed with fine yellowish pubescence, black, posterior margin of second tergite yellowish white. Head, thorax, and legs, orange red to dusky, tarsi blackish; wing pads fuscous, paler along the poorly defined claval suture.

Holotype: ♂ May 17, 1923, Ritzville, Washington (M. C. Lane); U. S. National Museum collection. *Allotype*: ♀ May 16, topotypic; U. S. N. M. collection. *Paratypes*: ♂ ♀ May 12, topotypic. ♂ "Colo. 1690." Several nymphs taken May 1 are also present from the type locality.

COQUILLETIA JESSIANA, n. sp.—Allied to *balli* Kngt., but differs in the longer second antennal segment which exceeds width of pronotum at base, and in having membrane pale at base. Coloration suggestive of *insignis* Uhler but differs in the small size and in the female by the polished and shining body.

♂. Length 4.7 mm., width across base of cuneus 1.33 mm. Head: width .80 mm., vertex .32 mm., from tip of tylus to dorsal margin of eye .74 mm. Rostrum, length 1.4 mm., reaching to near hind margin of sternum. Antennae: segment I, length .26 mm.; II, 1.42 mm.; III, 1.21 mm.; IV, .72 mm. Pronotum: length .78 mm., width at base 1.15 mm.; from base of pronotum to tip of tylus 1.61 mm., greater than length of second antennal segment.

Coloration dark fuscous brown, head and scutellum more brown than fuscous, with tylus, lora, and juga orange brown; basal two-thirds of corium and clavus, and basal one-third of cuneus, white, the apical portions black; the black apical band

of corium cut squarely across its anterior margin, the edge of the black color more sharply defined than in *insignis*.

♀. Length 4.4 mm., brachypterous, width across abdomen 1.4 mm. Head: width .96 mm., vertex .56 mm. Rostrum, length 1.66 mm., reaching between intermediate coxae. Antennae: segment I, length .28 mm.; II, 1.68 mm.; III, 1.27 mm.; IV, .69 mm. Pronotum: length .72 mm., width .80 mm. Form very similar to *insignis* but distinguished by the polished and shining surface; sparsely pubescent, without a vestige of wings.

Holotype: ♂ August 26, 1925, Sterling, Colorado (H. H. Knight); author's collection. *Allotype*: same data as type. *Paratypes*: 10 ♂ 4 ♀, and nymphs, taken with the types by sweeping semiarid plains, grassland mixed with sage-brush (*Artemisia* sp.). 2 ♂ 1 ♀ July 22, 1900, Denver, Colorado (E. D. Ball). ♂ June 1, 1926, alt. 6000 ft., Chiricahua Mts., Arizona (A. A. Nichol).

I have dedicated this interesting species to my wife, Jessie Mae Knight, who has ever been unselfish in not restricting the time I would spend on scientific work.

COQUILLETIA MIMETICA FLORIDANA, n. subsp.—Coloration similar to typical *mimetica* Osborn, but differs in the smaller size, more slender form and broader head.

♂. Length 5.1 mm., width at base of cuneus 1.24 mm. Head: width .98 mm., vertex .46 mm. Rostrum, length 1.63 mm., not attaining hind margin of sternum. Antennae: segment I, .34 mm.; II, 2.04 mm.; III, 1.92 mm.; IV, 1 mm. Pronotum: length .86 mm., width at base 1.06 mm. Distinguished by width of head being greater than length of pronotum; width of head also nearly equal to width of pronotum at base.

Holotype: ♂ July 24, 1926, Seebring, Florida (E. D. Ball); author's collection. *Paratype*: ♂, taken with the type.

While *floridana* can be separated from *mimetica* Osb. by as good structural characters as certain other species of the genus, its general aspect is so near that of *mimetica* that the position of subspecies more accurately expresses its relationship among other members of the genus. It is interesting to note that Dr. Ball has also taken typical *mimetica* Osb. in Florida (2 ♂ 1 ♀ May 15, 1926, Sanford), which indicates that there may be no

intermediate forms showing a gradual transition from *mimetica* to *floridana*. The connecting links in the evolution of *floridana* may already have disappeared.

COQUILLETIA MIMETICA LATICEPS, n. subsp.—♂. Coloration nearly as in *mimetica* Osborn, but form smaller and less elongate; head broader, eyes more protruding, width of head distinctly greater than length of pronotum. In *mimetica* the width of head scarcely equals length of pronotum. Differs from *floridana* in the distinctly protruding eyes which rise sharply above the general contour of frons and vertex; also differs in the relatively shorter and broader form.

Length 5.2 mm., width 1.3 mm. Head: width 1.01 mm., vertex .37 mm. Rostrum, length 1.57 mm., scarcely attaining posterior margin of sternum. Antennae: segment I, length .32 mm.; II, 2.04 mm.; III, 1.63 mm.; IV, .92 mm. Pronotum, length .88 mm., not equal to width of head, width at base 1.3 mm.

♀. Length 5.2 mm., wingless, width of abdomen 1.5 mm. Head: width 1.03 mm., vertex .56 mm., from tip of tylus to dorsal margin of eye .88 mm., postocular space .207 mm. Antennae: segment I, length .33 mm.; II, 1.83 mm.; III, 1.48 mm.; IV, .90 mm. Pronotum, length .83 mm., width .77 mm. Differs from *mimetica* in the narrower postocular space, which is much less than the lateral width of an eye (.33 mm.). In *mimetica* the postocular space is equal to lateral width of an eye.

Holotype: ♂ August 6, Delhi, Colorado (C. J. Drake); author's collection. *Allotype*: August 16, 1925, Sugar City, Colorado (Beamer & Lawson); Kansas University Collection. *Paratypes*: ♂ 2 ♀, taken with the allotype. 2 ♂ Aug. 14, 1925, Olney, Colorado (Beamer & Lawson). ♂ June 26, 1920, Fort Collins, Colorado (Geo. M. List).

SERICOPHANES FLORIDANUS, n. sp.—Distinguished by the small size and dark color; suggestive of *heidemanni* Popp., but female with prothorax more cylindrical than globose, venter white beneath except first two segments and lateral margins.

♀. Length 2.4 mm., brachypterous, width of abdomen .87 mm.; length of hemelytra .68 mm. Head: width .56 mm., vertex .355 mm. Rostrum, length .98 mm., reaching to base of hind coxae. Antennae: segment I, length .17 mm.; II, .83 mm.; III, .56 mm.; IV, .50 mm. Pronotum, length .44 mm., width at middle .43 mm., coxal clefts visible from above, pro-

thorax widest at that point; strongly and evenly convex, but more cylindrical than globose.

Coloration dark brownish black, having a dull waxen sheen, the short hemelytra with pruinose areas evident; front and hind coxae except base, pale, venter white beneath except first two segments and lateral margins.

♂. Length 2.6 mm., width at base of hemelytra .68 mm. Head: width .50 mm., vertex .28 mm. Rostrum, length .92 mm., reaching to middle of hind coxae. Antennae: segment I, length .17 mm.; II, .77 mm.; III, .56 mm.; IV, .44 mm. Pronotum, length .50 mm., width at base .71 mm.

Form and coloration very similar to *heidemanni* but distinguished by the small size, the female giving the best characters for separating the species.

Holotype: ♀ April 9, 1926, Sanford, Florida (E. D. Ball); author's collection. *Allotype*: ♂ Aug. 25-30, 1925, Sanford, Florida (E. D. Ball); author's collection. The writer is indebted to Dr. E. D. Ball for the collecting and presentation of this diminutive ant mimic.

RENODAELLA, New Genus.

Allied to *Renodacus* Dist., tribe Renodaeini; arolia converging at apices as in *Ceratocapsus* and *Pilophorus*; genitalia of the complicated type as in *Ceratocapsus*. Head much like *Pilophorus*, but all the antennal segments thickened as in *Ceratocapsus*, segment II gradually thickened from base to apex, not suddenly enlarged at apex as in *Renodacus*. Rostrum reaching between middle coxae. Pronotum much as in *Pilophorus*, shining, the base not covering mesoscutum as in *Renodacus*. Scutellum moderately convex, mesoscutum strongly elevated, capped by the moderately down-curved basal margin of pronotum. Hemelytra set with heavy, black, bristle-like hairs, much as in *Renodacus*; also set with patches of silvery, scale-like pubescence; dull, opaque, embolium and cuneus shining; clavus and corium distinctly elevated or convex, embolar margins only moderately sinuate. Membrane fully developed (♂). Genitalia complicated in structure much in the form of *Ceratocapsus*.

Genotype: *Renodaella nicholi*, new species.

RENODAELLA NICHOLI, n. sp.—♂. Length 3.2 mm., width 1.06 mm. Head: width .74 mm., vertex .326 mm.; eyes forming a part of the convex curve formed by front of head, basal margin of vertex sharp and overlapping anterior margin of pronotum as in *Pilophorus*. Rostrum, length 1.21 mm., reaching to near hind margin of intermediate coxae. Antennae: segment I, length .18 mm., thickness .059 mm.; II, .60 mm., gradually thickened from base toward apex (.074 mm.); III, .37 mm., thickness .059 mm., more slender near base; IV, .385 mm., thickness .074 mm., fusiform; clothed with fine pale pubescence. Pronotum: length .74 mm., width at base .95 mm.; basal margin arcuate, disk rather strongly and evenly convex, higher on posterior half; lateral margins concave, sharply narrowed anteriorly, coxal clefts visible from above.

Dark brownish black to piceous, shining; hemelytra dull, more brownish, clavus and apical area of corium darker, embolium and cuneus strongly shining; membrane uniformly dark fuscous; coxae except apex of front pair, basal one-fourth of hind and middle femora, and apical one-third of tibiae, pale. Clothed with rather sparse, fine, pale to yellowish pubescence, vertex with four rather long pale hairs on base; clavus and corium set with long, erect black bristles, arranged in poorly defined rows. Hemelytra bearing several patches of silvery, scale-like hairs, the largest of which forms a short transverse band across corium just before apex of clavus, but stopping short of claval suture; a narrower band runs from outer basal angle of clavus toward apex of cuneus, also three or four smaller patches of silvery scales on apical half of clavus and on outer basal half of clavus. Genitalia distinctive, right clasper with an erect dorsal prong, acuminate on apical half with the tip somewhat decurved; also bearing two ventral, incurved hooks, the lower member of which is twice as large as the other; on inner basal part of clasper a third hook arises and points mesad. Left clasper with a prominent sharp hook near base which curves upward and forward, this followed by a sharp, needle-like spine just behind; the main stem of clasper, upon reaching median line of segment, turns dorsally and expands into a rather broad, thin, fish-tailed terminal portion.

Holotype: ♂ September 9, 1925, Santa Rita Mts., alt. 4500 ft., Arizona (A. A. Nichol); author's collection. Named in honor of the collector, Mr. Andrew A. Nichol.